



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,689	11/04/2003	Jyrki Mattila	59643.00310	4933
32294	7590	07/27/2007	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			LAM, DUNG LE	
			ART UNIT	PAPER NUMBER
			2617	
			MAIL DATE	DELIVERY MODE
			07/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/699,689	MATTILA, JYRKI
	Examiner Dung Lam	Art Unit 2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 February 0211.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 April 2004 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1- 21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by *Schilling* (US Patent Number 6128328).

3. Regarding claim 1, Schilling teaches in Figure 5 a cellular communication system including at least one cell (A, B, C, Fig. 5), said cell comprising:

a coverage layer (A, B, C, Fig. 5) defining having a fixed (by definition, a cell has a fixed coverage area so that mobiles within the cell coverage can be reached by the broadcast channel carrier. The concept of having a fixed coverage that is defined by the range that the broadcast channel can reach is also admitted in the current application's background, para. 6, 7, 28 of applicant's specification; Schilling C7 L29-30) coverage area (Col. 3, lines 40-57);

a capacity layer including a plurality of carriers (Fig. 5A further comprises of multiple bands of frequencies, e.g. F1, F2, F3, F4, F5, F6; alternatively, Figs. 6 and 7; C9 L36-67), each carrier in the capacity layer having a dynamically variable coverage area (Col. 3, lines 36-39, Col. 8, lines 21-28 and Col 11 lines 25-55; alternatively, C12

L54-64, sector size is adjustable to meet the demand thus reads on "dynamically variable coverage").

4. Regarding **claim 2**, Schilling teaches all the limitations according to claim 1. Schilling's teachings discloses a power level of a carrier in a downlink of the coverage layer defines the coverage of said at least one cell (a base station coupled with base-power means to radiates signal over a coverage area from the base station to a remote, Col. 3, lines 40-57).

5. Regarding **claim 3**, Schilling teaches all the limitations according to claim 2. Schilling further teaches said power level is variable (Col. 10, line 19-21).

6. Regarding **claim 4**, Schilling teaches all the limitations according to claim 1. Schilling further teaches that a number of carriers in the capacity layer is variable (the radii of the concentric area is adjustable which means the density or capacity of the layer is variable, Col. 8 lines 31-35 and Col. 10, lines 25-26, Col. 12 Line 55 - Col 13 Line 26).

7. Regarding **claim 5**, Schilling teaches all the limitations according to claim 1. Schilling further teaches a power level of at least one carrier of said number of carriers in the capacity layer is variable (Col. 10, line 19-21 and Col. 11, lines 51-65).

8. Regarding **claim 6**, Schilling teaches all the limitations according to claim 1. Schilling teaches that a total transmission power for a downlink is divided between the

coverage layer and the capacity layer of said at least one cell in dependence on the coverage and capacity requirement of the system (Col. 11, lines 30-65).

9. Regarding **claim 7**, Schilling teaches all the limitations according to claim 6. Schilling further teaches power available for at least one of the coverage layer and the capacity layer is divided between carriers in the coverage layer and the capacity layer (Col. 11, lines 30-65).

10. Regarding **claim 8**, Schilling teaches all the limitations according to claim 1. Schilling teaches the cellular communication system comprises a multi-carrier system (6 directional antenna 109, Col. 7, lines 22-29).

11. Regarding **claim 9**, Schilling teaches all the limitations according to claim 1. Schilling further teaches the cellular communication system comprises a single carrier system (6 omni-directional antenna 109, Col. 7, lines 22-29).

12. Regarding **claims 10-18**, they are method claims corresponding to the apparatus claims 1-9. Therefore, they are rejected for the same reasons as claims 1-9.

13. Regarding **claim 19**, Schilling teaches a base station of a mobile communication system, said base station including: means for transmitting a carrier at a predetermined power level thereby defining a coverage area of a cell (Col. 3, lines 40-57 and

background of the present invention) and means for transmitting a variable number of carriers thereby carrying thereby defining a coverage area of a cell (Col. 3, lines 36-39, Col. 8, lines 21-28 and Col 11 lines 25-55, Col. 8 lines 31-35 and Col. 10, lines 25-26, Col. 12 Line 55 - Col 13 Line 26 Col. 13 ln 65- Col. 14 ln 8; alternatively, Figs. 6 and 7, C9 L36-67); wherein each of the variable number of carriers has a dynamically variable coverage area (C12 L54-64, sector size is adjustable to meet the demand).

14. Regarding **claim 20**, Schilling teaches all the limitations according to claim 19. Schilling further teaches power levels of a variable number of carriers depends upon a proximity of a mobile station associated with a carrier to a base station (Col. 10, lines 25-27).
15. Regarding **claim 21**, Schilling teaches all the limitations according to claim 20. Schilling further teaches a total power of the variable number of carriers comprises a predetermined power, and wherein a portion of said predetermined power among the variable number of carriers is determined by a total number of carriers (Col. 11, lines 30-65).
16. Regarding **claim 23**, Schilling teaches a cellular communication system according to claim 5, wherein the said power level is variable in dependence on a position of a mobile station (Col. 10, lines 25-27).
17. Regarding **claim 24**, Schilling teaches a method according to claim 14, further comprising varying the power level of a carrier in the capacity layer in dependence on a position of a mobile station (Col. 10, lines 25-27).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable by **Schilling** (US Patent Number 6128328) in view of **Lawrence** (US Publication Number 2004/0203837).
19. Regarding **claim 22**, Schilling teaches all the limitations according to claim 21. Schilling further teaches a second transmitting means for transmitting a variable number of users. However, he fails to teach that the power allocated to at least one carrier is configured to reduce in response to an increase in the variable number of carriers. In an analogous art, Lawrence teaches that the power level is adjusted according to the subscriber density and demand in a particular region (para. 2). Therefore, it would have been obvious for one of ordinary skill in the art the time of the invention to modify Schilling's teaching to include an adjustable power level in accordance to the capacity of the cell to maximize the signal quality.

#### ***Response to Arguments***

Applicant's arguments filed 5/3/07 have been fully considered but they are not persuasive.

Applicant argues that, "Schilling fails to disclose or suggest at least the feature of each carrier in the capacity layer having a dynamically variable coverage area" with the

reason that "the area of each concentric sector although adjustable in setting up the cell, does not vary after the system is put into use. If any of the carriers were to vary their coverage area while the system was in use, the whole system would break down because adjacent concentric sectors would no longer be guaranteed to communicate on different frequencies and hence the interference from adjacent concentric sector areas would be increased...." The examiner respectfully disagrees. The area has to be adjustable after the setting up of the system (BS sets a set of frequencies based on a remote's current location which means it's real-time, C9 L42-45) because the system's demand has to be changed dynamically to adapt to the ever changing demand. The changing of the coverage area will not break down the system as long as the adjacent sectors are also changed appropriately. (The examiner notes that Schilling does teach that various modifications can be made to the instant invention, C14 L8-10). As addressed above, the sector areas can indeed be adjusted to meet the change in demand (Fig. 6 and 7, C12 L55-65).

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

  
LESTER G. KINCAID  
SUPERVISORY PRIMARY EXAMINER